



Quality Enhancement Research Initiative - Diabetes Mellitus

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What is QUERI-DM?

Diabetes mellitus and its complications result in dramatic adverse health and economic consequences. It is a leading contributor to blindness, end-stage kidney disease and premature mortality (due to stroke and coronary artery disease) and in the US results in over \$77 billion dollars in direct health care costs each year. Diabetes is particularly important for the care we provide to veterans. Data collected by the National Center for Cost Containment (NCCC) shows that in 1994, 12.5% of outpatients received diabetes-related medications and supplies, and these patients had 70,000 hospital admissions, 3.6 million outpatient clinic visits and accounted for 25% of VHA pharmacy costs.

Therefore, it is not surprising that the VHA included diabetes as one of the 8 focus areas recently commissioned under the Quality Enhancement Research Initiative (QUERI)--<http://vaww.va.gov/resdev/queri.htm>.⁽¹⁾ QUERI-Diabetes Mellitus (QUERI-DM) is dedicated to diabetes quality improvement and is charged with bringing additional epidemiologic, economic, and statistical expertise to ongoing initiatives (by increasing interactions between researchers, clinicians, administrators and others involved in quality assess-

ment and improvement.⁽¹⁾ QUERI-DM is also charged with conducting investigations on important gaps in our knowledge and conducting rigorous evaluations of the effectiveness of ongoing and new quality improvement initiatives. The short-term objectives of QUERI-DM are to: 1) Gather baseline information on how current VHA diabetes care differs from the VHA guidelines. 2) Develop an efficient, validated system for monitoring key diabetes quality standards in the VHA. 3) Evaluate the effectiveness of current approaches to diabetes care and the success of guideline implementation initiatives. 4) Initiate 2 to 4 large-scale quality improvement projects to enhance adherence to practice guidelines and evaluate their impact on patient outcomes, including quality of life.

We believe that QUERI-DM represents an excellent opportunity to enhance diabetes care in the VA. Optimal diabetes care can dramatically improve the health of patients with diabetes and decrease diabetes-related complications.⁽²⁾ Achieving optimal care can often be difficult. For many quality indicators the VA surpasses values commonly reported in HMO and community practices, but there

are still many veterans with poor glycemic control, inadequate blood pressure and lipid control and missed opportunities for early interventions to prevent eye, kidney, and foot complications. Many are quick to blame the providers, but admonishing those working so hard to provide quality care is neither justified nor productive. Instead, we feel that working cooperatively with primary care providers can help further enhance the care that we provide our veterans. We are only at fault when we fail to look critically at our practices and strive to improve.

Towards this goal QUERI-DM has undertaken a variety of initiatives, some large and some small, directed at quality improvement. Many of these activities are being done collaboratively with others in VHA, including the NCCC, Office of Quality & Performance and Patient Care Services. QUERI-DM will also publish a regular newsletter, with this being the first. The newsletter will inform people about QUERI-DM activities, new developments in diabetes care and quality improvement initiatives in VHA. Anyone who would like to be on the

Continued on page 3

VISIT US AT OUR WEBSITE!!

<http://www.hsrd.ann-arbor.med.va.gov/queri-dm/queri-dm.htm>

Contact Us

Please feel free to contact us if you have any questions about QUERI-DM. Visit our website or contact Bonnie BootsMiller at 734-930-5144 or bonnie.bootsmiller@med.va.gov

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National Center for Cost Containment

The National Center for Cost Containment (NCCC), which is located in Milwaukee, WI, has been tracking diabetes in the VHA since 1994. Their reports are based on data that are extracted locally from participating VA facilities. During the 1st quarter of FY 99 the NCCC, in collaboration with QUERI-DM, collected FY 98 pharmacy data for all patients receiving any oral diabetes medications, insulin or blood glucose monitoring supplies from over 140 facilities. In addition, laboratory data were collected from 126 VA facilities. The NCCC's first report, focusing on pharmacy costs

and glycemic control, was distributed in June. Each facility received a station specific report that also included VISN and national results. The results for all participating facilities can be found on the NCCC web page, <http://vaww.va.gov/health/Nccc/default.htm>. Additional reports, focusing on such areas as lipid measurement, kidney screening and resource use, will soon be sent to each facility and will be available on the web. In the following article we highlight one of the key findings from the first NCCC FY98 report.

requirements may increase. However, each provider must ascertain that the patient is proficient in their SMBG technique. Initial and ongoing justification for SMBG use should be provided and should be linked to health outcomes.

The average SMBG costs among 96,061 patients receiving oral agents from 142 VA facilities was \$128 (S.D. \$254). These costs are not clearly correlated with facility level results (mean HbA1c, or the percentage of patients with the high risk HbA1c > 9.5%). It is likely that these variations in utilization result from both provider beliefs and preferences as well as patient factors. In order to appropriately allocate resources, providers should think carefully about initiating and maintaining SMBG in veterans with diabetes on oral agents.

Highlights from the first 1998 National Center for Cost Containment Diabetes Costs and Outcomes Report *Self Monitoring of Blood Glucose*

In FY98, 25% of the average outpatient pharmacy expenditures for each veteran with diabetes were related to controlling blood glucose levels, with an average cost of \$220 per patient. Of this, \$170 or 73% of all glycemic control costs could be attributed to self monitoring of blood glucose (SMBG). Self monitoring costs have increased from an average of \$67 in FY94 to \$149 in FY96 and to \$170 in FY98. Clearly, SMBG supplies are not only a major cost center in the VA, but the costs are increasing.

Oral agents are the most common pharmacologic treatment in the VA. In FY98, 61% of patients with diabetes (as identified using the pharmacy data) were on oral agents. Of those, 45% received SMBG supplies, which is an increase from 20% in FY94. The question arises as to whether the increased utilization of SMBG is warranted, since even recent studies of SMBG have been unable to demonstrate an im-

provement in blood glucose control in persons with diabetes treated with oral agents⁽²⁻⁴⁾. For this reason, the VHA Guidelines⁽¹⁾ (<http://www.va.gov/health/>) adapted the position of the American Diabetes Association Consensus Conference on SMBG⁽⁵⁾ for patients on oral agents:

1. Patients on stable doses of medications do not need frequent SMBG unless the information is being used to alter self-management or when providers are considering altering medications. In most cases, periodic HbA1c measurement is sufficient to ascertain glycemic control.
2. Patients who demonstrate stable glycemic control while on an unchanged stable oral regimen may require fewer or no strips. When metabolic control worsens or changes (illness, change in exercise or diet, etc.), testing

1. Veterans Health Administration Diabetes Mellitus Working Group, *Clinical Guideline for the Management of Diabetes Mellitus*, March 31, 1997, Version 1.0.
2. Wieland LD, Vigil JM, Hoffman RM, Janis LW. Relationship between home glucose testing and hemoglobin A1c in type 2 diabetes patients. *Am J Health Syst Pharm* 1997;54:1062-1065.
3. Oki JC, Flora DL, Isley WL. Frequency and impact of SMBG on glycemic control in patients with NIDDM in an urban teaching hospital. *The Diabetes Educator* 1997;23:419-424.
4. Faas A, Schellevis FG, van Eijk JTM. The efficacy of self-monitoring of blood glucose in NIDDM subjects. *Diabetes Care* 1997;20:1482-1486.
5. American Diabetes Association. Consensus Conference on Self Monitoring of Blood Glucose. *Diabetes Care* 1994;17:81-6.

Proactive Diabetes Case Management

Type 2 diabetes mellitus can be very difficult to manage for both providers and patients. On average, primary care providers see patients with type 2 diabetes 3-4 times a year, but monitoring and treatment requires daily attention. As a result, many patients have suboptimal glycemic and blood pressure control, which results in staggering and catastrophic long-term complications. Studies have consistently shown that all providers have patients who are dramatically out of compliance with treatment guide-

Continued from page 1

mailing list can contact us via our web site (see box on page 1). We are especially interested in hearing about diabetes programs that have been instituted at your facility. All too often, people across the country are working on the same problem or developing similar programs, but do not have the opportunity to learn from each other's experiences. We look forward to providing useful information and working together to provide veterans with diabetes the best care possible.

1. Krein SL, Hayward RA, Pogach L, BootsMiller BJ. Department of Veterans Affairs' Quality Enhancement Research Initiative for Diabetes Mellitus. *Medical Care* (in press).

2. Vijan S, Stevens DL, Herman WH, Funnell MM, Standiford CJ. Screening, prevention, counseling and treatment for the complications of type II diabetes mellitus. Putting evidence into practice. *J Gen Intern Med.* 1997;12:567-80.

lines and standards. And, without additional support, it is virtually impossible for a primary care provider to successfully manage some difficult to treat type 2 diabetes patients. Case management (also called disease or outcomes management) has been advocated as a solution to this problem. However, the costs and effectiveness of case management have not been rigorously evaluated.

This study is designed to evaluate the impact of a targeted, proactive diabetes case management intervention on: a) glycemic control, b) adherence to minimum standards (based on the VA guidelines), c) short-term resource use, d) veteran satisfaction, and e) short-term patient physiologic and functional outcomes. In addition, we will use simulation models to estimate the expected effect of changes in key processes of care and intermediate outcomes on end-stage outcomes and long-term costs.

The study is being conducted as a randomized controlled trial at two VAMCs. Two hundred sixty veterans who meet specific eligibility criteria are being recruited, randomly assigned to the intervention or control group, and will be followed for 18 months. The intervention uses Nurse Practitioner clinical care coordinators (a.k.a. case managers) to actively monitor and coordinate patient care, guided by treatment algorithms. While the treatment algorithms provide a common guide, the care coordinators are expected to use their own discretion to determine the intensity of the follow-up care that is provided for specific patients. For example: An individual who is newly started on insulin may require 1-2 telephone calls per week, whereas someone who is on a stable treatment regimen and not experiencing



any problems may require minimal monitoring.

Although the care coordinators will use the existing treatment algorithms as well as his/her clinical knowledge to monitor patients during this proactive intervention, they are also expected to work closely with the patient's primary provider and notify him/her of any recommended medication or dose changes as well as any medical problems. Throughout the study, the care coordinators will not only provide ongoing support to the patient but also reinforce the provider-patient relationship.

Impact: A case management intervention may improve care and lower costs for individuals with type 2 diabetes (or other chronic, multi-system diseases) by using a nurse specialist, nurse practitioner or physician assistant to actively assist both patients and their providers with diabetes care. This study investigates the effectiveness of this type of intervention for veterans with type 2 diabetes and will provide insight into the possible mechanisms of action or barriers to success of a case management approach for providing more efficient and effective care.

This study will be completed in early 2002. For more information about this study please contact Sarah Krein at skrein@umich.edu.

Needs Assessment Results

Contact People

Contact people have been identified at 86 of the approximately 143 facilities and 59 facilities have returned a completed QUERI-DM Needs Assessment.

Diabetes Data

Overall, 65 topic areas/data needs were identified by the respondents covering 9 major categories:

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|----------------------------------|------------------------------------|
| ~ Diabetes education | ~ Quality of life and satisfaction |
| ~ Diabetes-related complications | ~ Recommended care processes |
| ~ Epidemiology | ~ Resource use |
| ~ Home glucose monitoring | ~ Screening |
| ~ Information systems | |

The following is a list of the top 10 data requests with the number of facilities requesting that type of data.

1. HbA1c results/frequency of testing/trends/by medication therapy /by facility (31)
2. Lipid profiles/frequency of determination/by therapy (22)
3. Retinal exams/frequency/findings/trends/who performs (18)
4. Foot exams/frequency/follow-up and intervention/% with high risk feet (17)
5. Urine microalbumin testing/frequency/values/treatment (16)
6. Microvascular complications and co-morbidities (11)
7. Home blood glucose monitoring/frequency/values & record keeping /prevalence
Patient identified education needs/knowledge level/perceived barriers to control
Prevalence and incidence of diabetes in VA/demographics of veterans with diabetes
Treatment modes/most common oral agents/use of newer oral agents/costs
Diabetes education/attendance/content/access to and follow-up (10 respondents each)
8. Macrovascular complications and co-morbidities (8)
9. The impact of education on HbA1c and other recommended care processes (7)
10. Patient satisfaction and perception of primary provider/
Blood pressure measurement (5 respondents each)

Learn More

To find information on many of the topics listed above, be sure to check out the reports now being produced by the National Center for Cost Containment. These reports are being distributed to all VA facilities and posted on the Web at <http://vawww.va.gov/health/Nccc/default.htm>. In addition, report highlights will be featured in upcoming QUERI-DM newsletters and on the QUERI-DM website.



***Don't Be
Left Out!***

We still need contact people and needs assessments for the following facilities: Alexandria, Altoona, Amarillo, Bath, Battle Creek, Bedford, Birmingham, Bronx, Brooklyn, Butler, Canandaigua, Charleston, Cheyenne, Chillicothe, Cincinnati, Columbia (SC), Columbus, Dallas, Dayton, Decatur, Denver, Dublin, El Paso, Fayetteville (AR), Gainesville, Grand Junction, Hampton, Huntington, Iowa City, Las Vegas, Lexington, Lincoln, Little Rock, Loma Linda, Manchester, Manila, Marion (IL), Milwaukee, New York, Phoenix, Philadelphia, Pittsburgh, Salt Lake City, San Antonio, San Francisco, Seattle, Sepulveda, Shreveport, St. Cloud, Syracuse, Topeka, Walla Walla, Washington DC, West Palm Beach, White River Junction, Wilmington.

A contact person should be someone who is involved in diabetes care and possibly diabetes quality improvement programs at his/her facility. Even if a contact person has been identified for your facility, feel free to contact us to be added to our mailing list.

If you would like to find out who the QUERI-DM contact person is at your site, or agree to become the contact person and complete a needs assessment for your site, please contact Bonnie BootsMiller at the QUERI-DM Coordinating Center (734) 930-5144 or bonnie.bootsmiller@med.va.gov or contact us on-line.

<http://www.hsrd.ann-arbor.med.va.gov/queri-dm/queri-dm.htm>